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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte MICHAEL K. ESCHMANN

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Appeal 2008-0265
Application 10/751,018[1]
Technology Center 2100

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Decided: May 21, 2008

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Before JEAN R. HOMERE, JAY P. LUCAS, and STEPHEN C. SIU,
Administrative Patent Judges.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from the Examiner's
rejection of claims 1 through 25. We have jurisdiction under 35 U.S.C.
§ 6(b). We affirm.

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[1] Filed on Dec. 31, 2003. The real party in interest is Intel Corp.

The Invention

Appellant invented a method and system for prioritizing requests to access a disk cache. (Spec. 1.) As depicted in Figure 1, the system (10) includes a controller (20) coupled to a disk drive (24) and a nonvolatile disk cache (26). Particularly, the controller checks the request queue to determine if there is any pending demand request to read or write to the disk cache. If not, it implements a non-demand request to write back or demand flush data therefrom. (Spec. 8, l. 16- 9, l. 15.)

Independent claim 1 further illustrates the invention. It reads as follows:

1. A method comprising:

determining if there is a pending demand request to a cached disk subsystem and, if not, executing a non-demand request.

. In rejecting the claims on appeal, the Examiner relies upon the following prior art:

Herbst   US 2003/0145165 A1   Jul. 31, 2003

The Examiner rejects the claims on appeal as follows:

Claims 1 through 25 stand rejected under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over Herbst.

FINDINGS OF FACT

The following findings of fact (FF) are supported by a preponderance of the evidence.

Herbst

1. Herbst discloses a method and system for interrupting a write operation in a disk cache to service a read command therein. (Abstract, 2, para. [0014].)

2. As depicted in Figure 2, Herbst discloses an interface (202) that receives from a host (200) a read or write command, which is forwarded to a read cache or a write cache respectively. (Page 3, para. [0029].)

3. As shown in Figure 3, Herbst discloses that upon receiving a command from the host, a read determination operation (314) determines whether the command is a read command. If it is, then the write determination operation (318) determines if a disc write operation is in progress, and further determines whether it is appropriate to interrupt the write operation in order to execute the read operation. (Page 4, para. [0040]-[0041].[2])

4. If, however, the write determination operation (318) determines that the received command is a write operation, it places it in a queue to be executed. (Page 4, para. [0038].)

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[2] Herbst states, "[h]owever, in general, the handle write in progress operation 324 determines if it is appropriate or desired to interrupt or abort the disc write operation in progress to service the read command." (Para [0041], lines 7-10.)

PRINCIPLES OF LAW

ANTICIPATION

In rejecting claims under 35 U.S.C. § 102, "[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation." *Perricone v. Medicis Pharmaceutical Corp.*, 432 F.3d 1368, 1375 (Fed. Cir. 2005), citing *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed. Cir. 1992). "Anticipation of a patent claim requires a finding that the claim at issue 'reads on' a prior art reference." *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346 (Fed Cir. 1999) ("In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art.") (internal citations omitted).

OBVIOUSNESS

Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

The Supreme Court in *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966), stated that the following factual inquiries underpin any determination of obviousness:

> Under § 103, [1] the scope and content of the prior art are to be determined; [2] differences between the prior art and the claims at issue are to be ascertained; and [3] the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such (4) secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.

Where the claimed subject matter involves more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness must be based on "an apparent reason to combine the known elements in the fashion claimed." *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740 (2007). That is, "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.*, 127 S. Ct. at 1741, (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Such reasoning can be based on interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art. *KSR*, 127 S. Ct. at 1740-41.

ANALYSIS

Independent claim 1 recites in relevant part determining if there is a pending demand request to a cached disk subsystem, and if not, executing a non-demand request. (App. Br. 12, Claims Appendix.) Appellant argues that Herbst does not particularly teach executing a non-demand request *only* upon determining that no demand request is pending. (App. Br. 10.) Further, in the Reply Brief, Appellant explains the claimed invention as meaning that if a new demand request occurs during a write back execution, the write back operation is preempted, as indicated in block 60. (Reply Br. 1.) Appellant therefore concludes that Herbst teaches away from the invention since it allegedly discloses the opposite of what is claimed. (*Id.* 2.) The Examiner, in response, avers that Herbst's disclosure of upon determining that a write operation is in progress, interrupting the write operation (non-demand request) to service an incoming read operation (demand request) teaches or suggests the claimed invention. (Ans. 3-4.)

We note that Appellant's argument that the claim requires the non-demand request be executed *only* if it is determined that there is no pending demand request is unsupported by the record before us. In our view, the claim merely requires executing a non-demand request upon determining that no demand request is pending. However, since the claim language does not indicate what happens if it is determined that a demand request is pending, the claim therefore does not preclude the non-demand request from being executed in such a case. Thus, the pivotal issue before us is whether one of ordinary skill in the art would find that Herbst's disclosure of upon determining that a write operation is in progress, interrupting the write

operation to service an incoming read command teaches or suggests executing a non-demand request upon determining that no demand request is pending, as claimed. We answer this inquiry in the affirmative.

As detailed in the findings of facts section above, Herbst discloses upon identifying an incoming command as a read command, determining if a write operation is in progress. If so, it interrupts the write operation to service the incoming read command first. (FF. 1-3.) One of ordinary skill in the art would readily recognize that Herbst's read command and write operations teach the claimed demand request and non-demand request, respectively. According to the definitions provided in Appellant's Specification, a demand request includes a read command to read data from a cache disk.[3] Similarly, a non-demand request includes a write operation such as a write back command to write data to the cache disk.[4] Therefore, consistently with Appellant's definitions, Herbst's read command teaches the claimed demand request while Herbst's write operation teaches the claimed non-demand operation.

Next, as explained by Appellant[5], the claimed invention is directed to prioritizing demand requests over non-demand requests by interrupting pending non-demand requests to service an incoming demand request. Similarly, the ordinarily skilled artisan would aptly recognize that Herbst's interruption of a write operation in progress to execute an incoming read request teaches prioritizing the demand request over the non-demand request. Consequently, the ordinarily skilled artisan would recognize that

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[3] Spec. 5, ll. 3-6.
[4] Id. 8, l. 22- 9, l. 3.
[5] Id. *See* supra arguments

such priority of the demand requests necessitates that all such requests be executed first before a non-demand request is executed. For these reasons, Appellant's argument that Herbst teaches away from the claimed invention is not persuasive. It follows that Appellant has not shown that the Examiner erred in finding that Herbst anticipates or render independent claim 1 unpatentable.

Appellant does not provide separate arguments with respect to the rejection of claims 1 through 25. Therefore, we select claim 1 as being representative of the cited claims. Consequently, claims 2 through 25 fall together with representative claim 1. 37 C.F.R. § 41.37(c)(1)(vii).

SUMMARY and DECISON

Appellant has not shown that the Examiner erred in concluding that Herbst anticipates claims 1 through 25 under 35 U.S.C. § 102(e) or, in the alternative, renders the claims unpatentable under 35 U.S.C. § 103(a). Therefore, we affirm this rejection.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

<u>AFFIRMED</u>

rwk

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